



STATE OF MONTANA JOB PROFILE AND EVALUATION

The job profile is a streamlined position description and may serve as the core document for all human resource functions such as recruitment, selection, performance management and career and succession planning. It was developed, initially, for use in classifying positions in Pay Plan 020.

If you are converting a position to Pay Plan 020 and the position has not changed simply cut and paste the information needed from the current position description. The position description contains sections that are no longer used to classify the position, such as: Working Conditions and Physical Demands; Management and Supervision of Others; Supervision Received; Scope and Effect; and Personal Contacts. These may still be important to the position and may be included in **Section IV – Other Important Job Information**.

When working with a new position, classification request or change to a position in Pay Plan 020, complete the information below to provide the required documentation for classification.

SECTION I – Identification

Working Title Surveyor		Job Code Number 171254	Job Code Title Surveyor
Pay Band 4	Position Number 98099		Check ONE box : <input type="checkbox"/> FLSA Exempt <input checked="" type="checkbox"/> FLSA Non-Exempt
Department Transportation			Division and Bureau Highways & Engineering Division, Highways Bureau
Section and Unit Photogrammetry and Survey Section, Survey Unit			Work Address and Phone 2701 Prospect Avenue Helena, MT 59620 (406) 444-6020
Profile Produced By Bryce Larsen Montana Department of Transportation			Work Phone 406-444-6321
Annette Walstad CMS, LLC			406-442-4934

Work Unit Mission Statement or Functional Description - This section should include a complete statement of the mission or function as it relates to the work unit.

The Photogrammetry and Survey Section is responsible for the Montana Department of Transportation's photogrammetry and survey programs. Acting as the authority on survey issues for the Department, the Survey Unit is responsible for providing land surveying services, analyzing and reviewing surveys, coordinating surveys, formulating and implementing MDT survey policy, assuring quality of surveys, securing and managing survey data, serving as the MDT's technical support and resource center for survey issues, and determining and implementing time efficient and cost-effective survey methods.

Describe the Job's Overall Purpose:

The Land Surveyor position is located in the Survey Unit of the Photogrammetry and Survey Section and is directly responsible to the Land Survey Coordinator. This position actively participates in all types of surveys conducted for the Department's engineering, right-of-way, and legal functions. Types of surveying this position is accountable for includes but is not limited to the following: geodetic control, project control, photogrammetric control, hydrographic, topographic, land (cadastral), retracement, quality control, and construction. Survey data is collected and processed using state-of-the-art methods and equipment including: GPS systems, data collectors, total stations, digital levels, computers, and software. The Land Surveyor is required to make surveying decisions, operate and maintain equipment, and organize and direct field survey operations including survey personnel. To complete assigned duties, the Land Surveyor must be knowledgeable in field survey operations, survey computations, survey instrumentation, training procedures, survey law, and MDT survey policy. The requirements of this position are physically demanding and involve extensive statewide travel.

SECTION II - Major Duties or Responsibilities	% of Time
<p>This section should be a clear concise statement of the position's duties. Well written thorough task/duty statements are required here to accurately evaluate the position.</p> <p>What are the major duties or responsibilities assigned to this position? What are the specific tasks involved in accomplishing those duties. Group duties in order of importance and estimate the percent of time needed to perform each duty (estimates are not required for individual tasks). NOTE: Because you are identifying major duties usually 3-5, the quantity of time probably will not be less than 20%. If a duty is essential but not performed routinely you should list it. For example, lobbying during the legislative session may not take up a large percent of total work time, but can be an essential duty.</p> <p>I. <u>Reviews Surveys</u></p> <p>The Surveyor reviews surveys completed for the Department by consultant surveyors and district survey crews to assure accurate survey information is provided to other units for use in right-of-way acquisition and engineering design work.</p> <p>At this level, surveys are reviewed for compliance with MDT survey procedures, and for computational accuracy. This not only includes review of survey data but also involves making final computations and organizing data into a format usable by others. Areas of non-conformance or sub-standard work are identified by this position and reported to the Land Survey Coordinator by this position.</p>	<p>10%</p>

II. Performs Surveys

70%

The Surveyor is assigned several tasks ranging from party chief on survey projects that are more technical in nature to instrument person on surveys requiring professional surveying services. Surveys in the technical classification consist of targeting projects, differential leveling projects, localized horizontal control surveys, and topographical surveys. Approximately 50% of the time spent performing surveys entails party chief tasks including the following:

Reviewing survey requests to determine manpower, time, equipment and informational data needed to complete the survey.

Researching public and private records (i.e.- Bureau of Land Management, National Geodetic Survey, United States Geological Survey, county courthouse, county surveyors, private surveyors, etc.) to recover title, monument, and/or other survey histories pertinent to the survey being conducted.

Completing field survey activities by operating survey instruments, recording data, directing activities of personnel helping with the field survey, and performing all other survey operations in the field associated with gathering field data.

Contacting landowners and other parties to obtain permission to survey.

Organizing, computing, and adjusting field data to be used in compiling reports, and maps.

Preparing final documents (i.e. - maps, exhibits, control diagrams, certificates of survey, reports, control abstracts, coordinate listings, etc.) to be used in engineering planning and design, right-of-way acquisition and/or for submission to other agencies.

Fulfilling MDT's obligation in maintaining the National Geodetic Survey (NGS) vertical control network by replacing or providing direction to others to replace benchmarks, running levels in accordance with NGS specifications, and preparing level data for submission to NGS.

Submitting finalized surveys to the Land Survey Coordinator for review, approval, signature, and distribution.

The remaining 50% of time in this category is spent performing instrument person duties. In this capacity, the Surveyor is responsible for completing tasks assigned by the survey party chief, which include:

Operating highly technical survey equipment, measuring angles and distances, recording measurements in a survey notebook or with a data collector, setting survey monuments, searching for survey monuments, and executing other field survey operations necessary to complete the survey.

Helping the party chief research public and private records for monument and other survey histories, organize and compute field survey data, and prepare final documents.

III. Other Duties

20%

The Surveyor performs other duties as assigned to accomplish the goals and objectives of the Photogrammetry & Survey Section including but not limited to:

Providing consultant surveyors, district survey crews, and the public with survey information (i.e. - National Geodetic Survey data, MDT survey data, etc.) available through the Helena office.

Providing technical assistance to district survey crews on adjustment and operation of survey equipment to assure the full potential of the equipment is being realized.

Testing new survey procedures and equipment to provide the Land Survey Coordinator information necessary to incorporate efficient and cost-effective survey methods and procedures into the survey program.

Scheduling repair and maintenance work for the survey vehicle.

Evaluating, organizing, and preparing equipment to be used in surveys conducted by the survey unit.

Reviewing calibration baseline reports for all MDT survey grade electronic measuring devices and maintaining a record of these reports to establish an adjustment and performance history for each instrument.

Adjusting, maintaining, and cleaning survey equipment to assure proper alignment, operation, and safety.

Ordering and maintaining an inventory of survey supplies to assure availability when needed.

Operating machinery and equipment required to accomplish survey tasks including: vehicles, electronic total stations, theodolites, engineering levels, digital levels, data collectors, CADD work stations, calculators, computers and software, standard survey equipment, and GPS survey equipment.

Give specific examples of the types of problems solved, decisions made or procedures followed when performing the most frequent duties.

The Surveyor makes surveying decisions; reviews surveys for compliance with MDT survey procedures and for computational accuracy; operates, troubleshoots, and maintains technical surveying equipment; and organizes and directs field survey operations including survey personnel.

The Surveyor makes decisions such as determining which control points should be used, determining the accuracy of final survey data, and making final computations.

The Surveyor, when serving as party chief, solves problems that arise during surveys, which includes correcting inaccurate surveys, identifying and obtaining missing data, communicating with landowners, troubleshooting survey software, and resolving various other problems and errors. Many issues and problems encountered in the field require the Surveyor to draw on knowledge and expertise to make decisions and develop solutions that will impact the Department, landowners, and others.

What do you consider the most complicated part of the job?

The most complicated aspects of the job involve executing a variety of surveys used in project development, engineering design, litigation, and right-of-way acquisitions; and reviewing survey data and project data obtained from multiple sources. This work is complicated because the Surveyor is responsible for the quality of the survey data collected, the accuracy of survey reviews, and must consider a multitude of variables for each survey. In addition, as the field survey party chief, the position is responsible for addressing situations encountered in the field, including landowner contacts, equipment failures, work assignments of crewmembers, data anomalies, and other problems.

What laws, regulations, guidelines, manuals or other written established procedures are available to the incumbent?

Available laws, regulations, guidelines, and manuals include standard survey practices and procedures, MDT survey policy and procedures (MDT Survey Manual), Bureau of Land Management Manual of Instructions for the Survey of Public Lands, statute law and common law relating to property boundaries, legal principles of land surveying, the Montana Subdivision and Platting Act, the Certified Corner Recordation Act, and other applicable Montana codes.

Which of the duties and/or specific tasks listed under 1. (above) are considered “essential functions” which must be performed by this position (with or without accommodations)? (If you need information or training on the identification of essential functions, please contact MDT Human Resources Division.)

Duties (I)-Reviews Surveys, (II)-Performs Surveys, and (III)-Other Duties are considered essential functions because they require specialized expertise and skill and are the reasons the job exists. The following mental and physical demands are associated with these essential functions:

- Lifting objects up to 50 lbs.
- Extensive travel throughout the state to project locations
- Ability to walk over uneven terrain or in water
- Operating a personal computer
- Communicating in writing, in person and over the phone
- Dealing with the public
- Continual walking or standing
- Demands for accuracy in all aspects of work
- Operation of power tools and/or equipment
- Computing arithmetic operations
- Comparing data
- Compiling, analyzing, and coordinating data
- Exposure to extreme weather and high-speed traffic
- Operation of motor vehicles
- Ability to multi-task
- Ability to meet inflexible deadlines
- Decision-making that affects the public health and safety
- Instructing
- Interpersonal skills/behaviors
- Risk of injury from potentially dangerous animals

6. If this position supervises other positions, complete the following information.

The number of FTE employees directly supervised is **0**.

List the complexity levels/pay bands of each those subordinates **n/a**.

Please list the Position Numbers for those directly supervised **n/a**.

Is this position responsible for (please check ONLY those boxes which apply to the position and for which the position has "signatory" authority.)

- ☐ Hiring ☐ Layoffs/termination of temporary or seasonal workers
☐ Performance Management (conducting and signing performance appraisals as the direct supervisor or the reviewing manager) ☐ Promotions
☐ Direct /Line Supervision ☐ Leadworker ☐ Discipline ☒ Other:

When serving in the capacity of party chief, the surveyor assumes the role of lead worker. Lead worker responsibilities include directing activities of all field personnel assigned to a specific survey project for the duration of the assignment (generally several days to one week). A crew of one to three field people encompassing all levels of Engineering Techs., rotational engineers, and survey aides are typically assigned to a survey project that involve personnel from the Photogrammetry & Survey Section.

7. Please attach an up-to-date Organizational Chart (or copy from a Power Point document into space below).

ATTACHED.

SECTION III - Minimum Qualifications - List the minimum requirements for first day of work. (These will be the minimum qualifications utilized for recruitment and performance management purposes; this information is not used for classification purposes.)

Please list the main knowledge and skill areas required for the job:

Knowledge: Thorough knowledge of the concepts, theories, methods, practices and procedures of surveying, MDT survey policy and procedures, survey instrumentation, survey datums, geometry, trigonometry, statistics, computers, and survey computation and adjustment software. Considerable knowledge of the B.L.M. Manual of Instructions for the Survey of Public Lands, statute law and common law relating to property boundaries, legal principles of land surveying, the Montana Subdivision and Platting Act, the Certified Corner Recordation Act. Working knowledge of MDT highway design and construction.

Skills: Skilled in the use and operation of survey instruments of all types. Skilled in reading and interpreting maps and plans.

What behaviors are required to perform the duties? NOTE: Identifying behaviors used for recruitment and selection and other HR functions are part of building a competency model (see Creating Competency Models in Guide). A position description will provide helpful information if a model has not been developed. Often “abilities” from the current PD can be stated as desired and observable behaviors. For example, “the ability to communicate clearly in writing” can be restated “writes clearly and concisely.”

Efficiency and Focus: The incumbent maintains focus and effectiveness when working on multiple tasks, projects, and opportunities. Demonstrates ability to complete projects successfully and reviews work to ensure accuracy, completeness, and quality.

Communication: The incumbent communicates effectively verbally and in writing by expressing and presenting ideas and thoughts clearly, succinctly, and in an understandable manner. Adjusts language and terminology to address the specific understanding and needs of the audience and/or project.

Problem-solving: The incumbent applies new and evolving ideas, methods, designs, and technologies; uses broad experience and expertise to solve problems in a faster, more effective manner; thinks on his or her feet; optimizes past practice in approaching new situations; and thinks of methods, supplies, and resources that can be used to achieve project objectives.

Judgment: Commits to a sensible, logical, and valid action after considering alternative actions and their consequences. The incumbent shows initiative and independence in taking appropriate action to meet challenging goals, objectives or project needs. Demonstrates self-confidence in own capability to accomplish tasks and solve problems.

Analytical Thinking: The incumbent sees relationships, connections, patterns, and trends not obvious to others, or in new ways; extrapolates complex data, makes inferences, and uses intuition to apply data to project plans; and anticipates obstacles, and considers the impacts of decisions on present and future projects.

Teamwork: Builds rapport, establishes strong, cooperative working relationships and interactions with a variety of people. Anticipates interests of others, deals with objections, manages differences and resolves conflicts, identifies the interests of others, and seeks solutions to conflicts. Achieves results by focusing group energies and resources on common goals and objectives. Draws on the talents of all team members and ensure the team has what it needs to succeed.

Professional Development: Actively seeks opportunities for learning and self-development. Seizes on-the-job learning opportunities and applies new knowledge gained through work experiences and training. Identifies own strengths and development needs and is willing to ask questions and/or ask for help.

Education and experience: Please indicate the minimum educational requirements for this job, as it relates to a new employee on the first day of work (not the educational background of the person now in the position), the specific fields of study that are acceptable, and whether a Master's degree (in which fields) will substitute for any of the required job related experience.

This position requires an Associate's degree in surveying.

Other training (e.g., software, specific machinery, etc.), certification (e.g., CPA, Professional Engineer, etc.), or licensing (e.g., commercial driver's, pilot, psychologist, etc.) required (please specify):

A valid Montana Drivers License is required.

Please indicate the minimum amount of job-related work experience needed as a new

employee on the first day of work (not the experience of the person now in the position). Please indicate the specific types of experience that will be considered job-related.

No work experience is required. Two years of progressively responsible experience in control survey, route survey and/or boundary survey including experience as an instrument person is preferred.

☒ **This agency will accept alternative methods of obtaining necessary qualifications.**

For recruiting purposes please list specific examples of acceptable alternative methods of obtaining those qualifications. These examples will appear on a vacancy announcement.

Acceptable alternative methods of obtaining the necessary qualifications include:

Bachelor's degree in surveying with no prior work experience. Two years of progressively responsible experience in control survey, route survey, and/or boundary including experience as an instrument person is preferred.

Bachelor's degree in a related field plus two years of progressively responsible experience in control survey, route survey, and/or boundary including experience as an instrument person is required.

Associate's degree in Surveying, a Land Survey Intern Certificate, and years (4) years of progressively responsible experience in boundary survey, control survey, and route survey including experience as a survey party chief.

-OR-

A high school diploma, plus six years of progressively responsible experience in control survey, route survey, and/or boundary survey including experience as an instrument person is required.

SECTION IV – Other Important Job Information

List any other important information associated with this position, such as working conditions or other factors which are deemed critical or non-negotiable to the position and which will need to be included on the vacancy announcement or other recruitment documents. (This information will be NOT be used for classification purposes.) For example: The position is required to travel throughout the state in excess of 12,000 miles per year and to perform duties on active construction sites in proximity to heavy equipment, hot asphalt, and high speed traffic, requiring use of hard hats and specialized safety training. OR, This position is not subject to alternative work schedules or working from home as it is required to answer the phone and receive visitors for the agency between the hours of 8am to 5pm, Monday through Friday.

Strenuous physical activities are required on the job including digging, cutting, hiking, and packing equipment in excess of 30 lbs. Survey activities are done year around throughout the state exposing the Registered Land Surveyor to hazards associated with extreme climatic conditions, remote areas, rough terrain, and surveying along highway corridors.

Extensive statewide travel from the Helena headquarters and shifts other than normal are required to accomplish department goals and objectives.

SECTION V – Signatures		
My signature below indicates the statements in Section I to IV are accurate and complete.		
Employee: Vacant Signature	Title	Date
Immediate Supervisor: Bryce Larsen Signature //SIGNED//	Supervisor, Photogrammetry & Survey Title	12/13/04 Date
Name: Paul Ferry Signature //SIGNED//	Highways Engineer Title	12/09/04 Date
Division/District Administrator: Loran Frazier Signature //SIGNED//	Chief Engineer Title	1/26/04 Date
Departmental Designee: Jean Bond Signature	Chief, Employee Relations Bureau, Human Resources Division Title	1/28/05 Date

Recruitment Review: My signature below attests to my review of and determination that the minimum qualifications (education and experience) listed in this profile meet the established recruitment standards of MDT.	
Signature //SIGNED//	Date: 12/13/04
Name: Debby Williams	Title: Human Resource Specialist (District/Helena) Montana Department of Transportation

Upon completion of this section the preparer, district human resource specialist, or other signing authority should forward the signed hard copy and the electronic copy of this job profile (JP), along with an Agency Classification Request (ACR) and an up-to-date Organizational Chart (if not included in the body of the JP) to the Chief of the Employee Relations Bureau, Human Resources Division, MDT in Helena.

The electronic copy naming convention for JPs sent by the District or from Helena supervisors to Human Resources in Helena should be: (Position#) JP-MDT.doc (e.g., 34015JP-MDT.doc).